POTATO (*Solanum tuberosum* 'Lamoka')
Pythium Leak; *Pythium ultimum*

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Evaluation of in-furrow fungicides to manage Pythium leak of potato in Michigan, 2022.

A field trial was established at the Montcalm Research Center in Stanton, MI to test the efficacy of in-furrow fungicides for managing Pythium leak of potato. A randomized complete block design was used, and treatments were replicated four times. US#1 'Lamoka' potatoes were cut into 2-oz seed pieces and left to suberize. The trial was hand-planted 3 Jun in loamy sand soil. Plots were two rows wide (34-in row spacing) by 20 ft long and seeded at 1.2 seed/row-ft. Inoculations and in-furrow applications were made before closing furrows. Plots were inoculated with a wet millet and rye mix infested with *P. ultimum* at a volume of 6.25 mL/row-ft. Fungicides were applied using a CO_2-powered backpack sprayer, equipped with TJ4002E nozzles (10.5 gal/A; 40 psi). Stand establishment was monitored early season and disease data were collected after harvest. Both rows of plots were harvested 28 Sep. While grading tubers, external leak incidence was visually estimated for the entire plot and internal leak incidence was calculated from ten arbitrarily selected tubers cut longitudinally in half. Stem counts from 6 Jul, external and internal leak incidence (DI), and estimated marketable yield (cwt/A) were compared among treatments. A generalized linear mixed model procedure was used to conduct the ANOVA and mean separations at the α=0.05 significance level (SAS version 9.4).

Significant differences were observed among stem counts ($P < 0.0001$). Stem counts in the trial ranged from 60.8 to 112.5 stems per plot, with the highest stem counts observed in programs 4, 6, and 8. No differences were observed in external DI ($P > 0.05$), though programs 3-8 had numerically greater incidences than the non-inoculated control (program 2) yet lower than the inoculated control (program 1). Internal DI was significantly different among treatments ($P < 0.05$). Programs 5 and 6 both had a DI of 1.3% and were significantly lower than the inoculated control (5.0%) but not different from the non-inoculated control (0.0%). Marketable yield was significantly different among treatments ($P < 0.05$). Program marketable yields ranged from 258 to 324 cwt/A; programs 4, 6, and 8 had the greatest yield in the trial.

No.	Treatment (Rate[z])	Stem Counts (6 Jul)[y]		External Leak Incidence (%)[x]	Internal Leak Incidence (%)[w]		Marketable Yield (cwt/A)	
1	Inoculated Control	60.8	c	13.9	5.0	ab	258	c
2	Non-Inoculated Control	64.8	c	0.4	0.0	c	263	c
3	Revus 2.09 SC (8 fl oz)	70.5	c	9.4	6.3	a	262	c
4	Orondis Gold (28 fl oz)	96.0	ab	3.5	3.8	a-c	307	ab
5	Orondis Gold DC (28 fl oz)	78.8	bc	4.0	1.3	bc	269	bc
6	Orondis Gold DC (48 fl oz)	112.5	a	3.6	1.3	bc	300	a-c
7	Elumin (8 fl oz)	67.5	c	6.0	7.5	a	280	bc
8	Ridomil Gold 465 SL (6.1 fl oz)	110.8	a	9.4	3.8	a-c	324	a

[z] All rates are listed as a measure of product per acre applied in-furrow at planting.
[y] Column values followed by the same letter were not significantly different based on Fisher's Protected LSD (α=0.05).
[x] During grading, external leak incidence was visually estimated from all harvested tubers per plot.
[w] Internal leak incidence was calculated from 10 arbitrarily selected tubers cut in half.